

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/581,466  
Source: IFW D  
Date Processed by STIC: 6/14/06

# ***ENTERED***



IFWP

## RAW SEQUENCE LISTING

DATE: 06/14/2006

PATENT APPLICATION: US/10/581,466

TIME: 10:09:20

Input Set : A:\AVA-434.3P US.txt

Output Set: N:\CRF4\06142006\J581466.raw

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3 <110> APPLICANT: Sizemore, Donata
4     Tinge, Steven A.
5     Killeen, Kevin P.
7 <120> TITLE OF INVENTION: Orally-Administered Live Bacterial Vaccines For Plague
9 <130> FILE REFERENCE: AVA-434.3P US
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/581,466
12 <141> CURRENT FILING DATE: 2006-06-01
14 <150> PRIOR APPLICATION NUMBER: PCT/US2004/041282
15 <151> PRIOR FILING DATE: 2004-12-09
17 <150> PRIOR APPLICATION NUMBER: 60/528,140
18 <151> PRIOR FILING DATE: 2003-12-09
20 <150> PRIOR APPLICATION NUMBER: 60/559,259
21 <151> PRIOR FILING DATE: 2004-04-02
23 <150> PRIOR APPLICATION NUMBER: 60/573,517
24 <151> PRIOR FILING DATE: 2004-05-22
26 <150> PRIOR APPLICATION NUMBER: 60/610,474
27 <151> PRIOR FILING DATE: 2004-09-16
29 <160> NUMBER OF SEQ ID NOS: 14
31 <170> SOFTWARE: PatentIn version 3.3
33 <210> SEQ ID NO: 1
34 <211> LENGTH: 453
35 <212> TYPE: DNA
36 <213> ORGANISM: Yersinia pestis
38 <400> SEQUENCE: 1
39 atggcagatt taactgcaag caccactgca acggcaactc ttgttgaacc agcccgcatc      60
41 actcttacat ataaggaagg cgctccaatt acaattatgg acaatggaaa catcgataca      120
43 gaattacttg ttggtacgct tactcttggc ggctataaaa caggaaccac tagcacatct      180
45 gttaacttta cagatgccgc gggatgatccc atgtacttaa catttacttc tcaggatgga      240
47 aataaccacc aattcactac aaaagtgatt ggcaaggatt ctagagattt tgatatctct      300
49 cctaaggtaa acggtgagaa ccttgtgggg gatgacgtcg tcttggctac gggcagccag      360
51 gatttctttg ttcgctcaat tgggttccaaa ggcggtaaac ttgcagcagg taaatacact      420
53 gatgctgtaa ccgtaaccgt atctaaccaa taa                                     453
56 <210> SEQ ID NO: 2
57 <211> LENGTH: 150
58 <212> TYPE: PRT
59 <213> ORGANISM: Yersinia pestis
61 <400> SEQUENCE: 2
63 Met Ala Asp Leu Thr Ala Ser Thr Thr Ala Thr Ala Thr Leu Val Glu
64 1           5           10           15
67 Pro Ala Arg Ile Thr Leu Thr Tyr Lys Glu Gly Ala Pro Ile Thr Ile
68           20           25           30
71 Met Asp Asn Gly Asn Ile Asp Thr Glu Leu Leu Val Gly Thr Leu Thr
72           35           40           45

```

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75 Leu Gly Gly Tyr Lys Thr Gly Thr Thr Ser Thr Ser Val Asn Phe Thr
76      50                      55                      60
79 Asp Ala Ala Gly Asp Pro Met Tyr Leu Thr Phe Thr Ser Gln Asp Gly
80 65                      70                      75                      80
83 Asn Asn His Gln Phe Thr Thr Lys Val Ile Gly Lys Asp Ser Arg Asp
84                      85                      90                      95
87 Phe Asp Ile Ser Pro Lys Val Asn Gly Glu Asn Leu Val Gly Asp Asp
88                      100                      105                      110
91 Val Val Leu Ala Thr Gly Ser Gln Asp Phe Phe Val Arg Ser Ile Gly
92                      115                      120                      125
95 Ser Lys Gly Gly Lys Leu Ala Gly Lys Tyr Thr Asp Ala Val Thr
96      130                      135                      140
99 Val Thr Val Ser Asn Gln
100 145                      150

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103 &lt;210&gt; SEQ ID NO: 3

104 &lt;211&gt; LENGTH: 981

105 &lt;212&gt; TYPE: DNA

106 &lt;213&gt; ORGANISM: Yersinia pestis

108 &lt;400&gt; SEQUENCE: 3

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109 atgggttagag cctacgaaca aaacccacaa cattttattg aggatctaga aaaagttagg 60
111 gtggaacaac ttactggtca tggttcttca gttttagaag aattgggttca gttagtcaaa 120
113 gataaaaata tagatatttc cattaatat gatcccgaga aagattcgga ggtttttgcc 180
115 aatagagtaa ttactgatga tatcgaattg ctcaagaaaa tcctagctta ttttctaccc 240
117 gaggatgcca ttcttaaagg cggtcattat gacaaccaac tgcaaaatgg catcaagcga 300
119 gtaaaaagagt tccttgaatc atcgccgaat acacaatggg aattgcgggc gttcatggca 360
121 gtaatgcatt tctctttaac cgccgatcgt atcgatgatg atattttgaa agtgattggt 420
123 gattcaatga atcatcatgg tgatgcccgt agcaagttgc gtgaagaatt agctgagctt 480
125 accgcccgaat taaagattta ttcagttatt caagccgaaa ttaataagca tctgtctagt 540
127 agtggcacca taaatatcca tgataaatcc attaattctca tggataaaaa tttatatggt 600
129 tatacagatg aagagatttt taaagccagc gcagagtaca aaattctcga gaaaatgcct 660
131 caaacacaca ttcaggtgga tgggagcgag aaaaaaatag tctcgataaa ggactttctt 720
133 ggaagtgaga ataaaagaac cggggcggtg ggtaattctga aaaactcata ctcttataat 780
135 aaagataata atgaattatc tcactttgcc accacctgct cggataagtc caggccgctc 840
137 aacgacttgg ttagccaaaa aacaactcag ctgtctgata ttacatcacg ttttaattca 900
139 gctattgaag cactgaaccg tttcattcag aaatatgatt cagtgatgca acgtctgcta 960
141 gatgacacgt ctggtaaata a
144 <210> SEQ ID NO: 4
145 <211> LENGTH: 326
146 <212> TYPE: PRT
147 <213> ORGANISM: Yersinia pestis
149 <400> SEQUENCE: 4

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144 &lt;210&gt; SEQ ID NO: 4

145 &lt;211&gt; LENGTH: 326

146 &lt;212&gt; TYPE: PRT

147 &lt;213&gt; ORGANISM: Yersinia pestis

149 &lt;400&gt; SEQUENCE: 4

```

151 Met Val Arg Ala Tyr Glu Gln Asn Pro Gln His Phe Ile Glu Asp Leu
152 1      5                      10                      15
155 Glu Lys Val Arg Val Glu Gln Leu Thr Gly His Gly Ser Ser Val Leu
156      20                      25                      30
159 Glu Glu Leu Val Gln Leu Val Lys Asp Lys Asn Ile Asp Ile Ser Ile
160      35                      40                      45
163 Lys Tyr Asp Pro Arg Lys Asp Ser Glu Val Phe Ala Asn Arg Val Ile
164      50                      55                      60

```

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```

167 Thr Asp Asp Ile Glu Leu Leu Lys Lys Ile Leu Ala Tyr Phe Leu Pro
168 65 70 75 80
171 Glu Asp Ala Ile Leu Lys Gly Gly His Tyr Asp Asn Gln Leu Gln Asn
172 85 90 95
175 Gly Ile Lys Arg Val Lys Glu Phe Leu Glu Ser Ser Pro Asn Thr Gln
176 100 105 110
179 Trp Glu Leu Arg Ala Phe Met Ala Val Met His Phe Ser Leu Thr Ala
180 115 120 125
183 Asp Arg Ile Asp Asp Asp Ile Leu Lys Val Ile Val Asp Ser Met Asn
184 130 135 140
187 His His Gly Asp Ala Arg Ser Lys Leu Arg Glu Glu Leu Ala Glu Leu
188 145 150 155 160
191 Thr Ala Glu Leu Lys Ile Tyr Ser Val Ile Gln Ala Glu Ile Asn Lys
192 165 170 175
195 His Leu Ser Ser Ser Gly Thr Ile Asn Ile His Asp Lys Ser Ile Asn
196 180 185 190
199 Leu Met Asp Lys Asn Leu Tyr Gly Tyr Thr Asp Glu Glu Ile Phe Lys
200 195 200 205
203 Ala Ser Ala Glu Tyr Lys Ile Leu Glu Lys Met Pro Gln Thr Thr Ile
204 210 215 220
207 Gln Val Asp Gly Ser Glu Lys Lys Ile Val Ser Ile Lys Asp Phe Leu
208 225 230 235 240
211 Gly Ser Glu Asn Lys Arg Thr Gly Ala Leu Gly Asn Leu Lys Asn Ser
212 245 250 255
215 Tyr Ser Tyr Asn Lys Asp Asn Asn Glu Leu Ser His Phe Ala Thr Thr
216 260 265 270
219 Cys Ser Asp Lys Ser Arg Pro Leu Asn Asp Leu Val Ser Gln Lys Thr
220 275 280 285
223 Thr Gln Leu Ser Asp Ile Thr Ser Arg Phe Asn Ser Ala Ile Glu Ala
224 290 295 300
227 Leu Asn Arg Phe Ile Gln Lys Tyr Asp Ser Val Met Gln Arg Leu Leu
228 305 310 315 320
231 Asp Asp Thr Ser Gly Lys
232 325

```

235 &lt;210&gt; SEQ ID NO: 5

236 &lt;211&gt; LENGTH: 1437

237 &lt;212&gt; TYPE: DNA

238 &lt;213&gt; ORGANISM: Yersinia pestis

240 &lt;400&gt; SEQUENCE: 5

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241 atggcagatt taactgcaag caccactgca acggcaactc ttgttgaacc agcccgcac 60
243 actcttacat ataaggaagg cgctccaatt acaattatgg acaatggaaa catcgataca 120
245 gaattacttg ttggtacgct tactcttggc ggctataaaa caggaaccac tagcacatct 180
247 gttaacttta cagatgccgc ggggtgatccc atgtacttaa catttacttc tcaggatgga 240
249 aataaccacc aattcactac aaaagtgatt ggcaaggatt ctagagattt tgatatctct 300
251 cctaaggtaa acggtgagaa ccttgtgggg gatgacgtcg tcttggctac aggcagccag 360
253 gatttctttg ttcgtccaat tggttccaaa ggcggtaaa ttgcagcagg taaatacact 420
255 gatgctgtaa ccgtaaccgt atctaaccaa gaattcatga ttagagccta cgaacaaaac 480
257 ccacaacatt ttattgagga tctagaaaaa gttagggtgg aacaacttac tggtcatggt 540
259 tcttcagttt tagaagaatt ggttcagtta gtcaaagata aaaatataga tatttccatt 600

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261 aaatatgata ccagaaaaga ttccggagggt tttgccaata gagtaattac tgatgatata 660
263 gaattgctca agaaaatcct agcttatttt ctacccgagg atgccattct taaaggcggg 720
265 cattatgaca accaactgca aaatggcatc aagcgagtaa aagagttcct tgaatcatcg 780
267 ccgaatacac aatgggaatt gcgggcgttc atggcagtaa tgcatttctc ttttaaccgcc 840
269 gatcgtatcg atgatgatat ttgaaagtg attggttgatt caatgaatca tcatgggtgat 900
271 gcccgtagca agttgcgtga agaattagct gagcttaccg ccgaattaaa gattttattca 960
273 gttattcaag ccgaaattaa taagcatctg tctagtagtg gcaccataaa tatccatgat 1020
275 aaatccatta atctcatgga taaaaattta tatgggtata cagatgaaga gattttttaa 1080
277 gccagcgag agtacaaaat tctcgagaaa atgcctcaaa ccaccattca ggtggatggg 1140
279 agcgagaaaa aaatagtctc gataaaggac tttcttgga gtgagaataa aagaaccggg 1200
281 gcgttggtta atctgaaaaa ctcatactct tataataaag ataataatga attatctcac 1260
283 tttgccacca cctgctcgga taagtccagg ccgctcaacg acttggttag ccaaaaaaca 1320
285 actcagctgt ctgatattac atcacgtttt aattcagcta ttgaagcact gaaccgtttc 1380
287 attcagaaat atgattcagt gatgcaacgt ctgctagatg acacgtctgg taaatga 1437

```

290 &lt;210&gt; SEQ ID NO: 6

291 &lt;211&gt; LENGTH: 478

292 &lt;212&gt; TYPE: PRT

293 &lt;213&gt; ORGANISM: Artificial

295 &lt;220&gt; FEATURE:

296 &lt;223&gt; OTHER INFORMATION: F1-V Antigen Polypeptide

298 &lt;400&gt; SEQUENCE: 6

```

300 Met Ala Asp Leu Thr Ala Ser Thr Thr Ala Thr Ala Thr Leu Val Glu
301 1 5 10 15
304 Pro Ala Arg Ile Thr Leu Thr Tyr Lys Glu Gly Ala Pro Ile Thr Ile
305 20 25 30
308 Met Asp Asn Gly Asn Ile Asp Thr Glu Leu Leu Val Gly Thr Leu Thr
309 35 40 45
312 Leu Gly Gly Tyr Lys Thr Gly Thr Thr Ser Thr Ser Val Asn Phe Thr
313 50 55 60
316 Asp Ala Ala Gly Asp Pro Met Tyr Leu Thr Phe Thr Ser Gln Asp Gly
317 65 70 75 80
320 Asn Asn His Gln Phe Thr Thr Lys Val Ile Gly Lys Asp Ser Arg Asp
321 85 90 95
324 Phe Asp Ile Ser Pro Lys Val Asn Gly Glu Asn Leu Val Gly Asp Asp
325 100 105 110
328 Val Val Leu Ala Thr Gly Ser Gln Asp Phe Phe Val Arg Ser Ile Gly
329 115 120 125
332 Ser Lys Gly Gly Lys Leu Ala Ala Gly Lys Tyr Thr Asp Ala Val Thr
333 130 135 140
336 Val Thr Val Ser Asn Gln Glu Phe Met Ile Arg Ala Tyr Glu Gln Asn
337 145 150 155 160
340 Pro Gln His Phe Ile Glu Asp Leu Glu Lys Val Arg Val Glu Gln Leu
341 165 170 175
344 Thr Gly His Gly Ser Ser Val Leu Glu Leu Val Gln Leu Val Lys
345 180 185 190
348 Asp Lys Asn Ile Asp Ile Ser Ile Lys Tyr Asp Pro Arg Lys Asp Ser
349 195 200 205
352 Glu Val Phe Ala Asn Arg Val Ile Thr Asp Asp Ile Glu Leu Leu Lys
353 210 215 220

```

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Input Set : A:\AVA-434.3P US.txt

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356 Lys Ile Leu Ala Tyr Phe Leu Pro Glu Asp Ala Ile Leu Lys Gly Gly
357 225                230                235                240
360 His Tyr Asp Asn Gln Leu Gln Asn Gly Ile Lys Arg Val Lys Glu Phe
361                245                250                255
364 Leu Glu Ser Ser Pro Asn Thr Gln Trp Glu Leu Arg Ala Phe Met Ala
365                260                265                270
368 Val Met His Phe Ser Leu Thr Ala Asp Arg Ile Asp Asp Asp Ile Leu
369                275                280                285
372 Lys Val Ile Val Asp Ser Met Asn His His Gly Asp Ala Arg Ser Lys
373                290                295                300
376 Leu Arg Glu Glu Leu Ala Glu Leu Thr Ala Glu Leu Lys Ile Tyr Ser
377 305                310                315                320
380 Val Ile Gln Ala Glu Ile Asn Lys His Leu Ser Ser Ser Gly Thr Ile
381                325                330                335
384 Asn Ile His Asp Lys Ser Ile Asn Leu Met Asp Lys Asn Leu Tyr Gly
385                340                345                350
388 Tyr Thr Asp Glu Glu Ile Phe Lys Ala Ser Ala Glu Tyr Lys Ile Leu
389                355                360                365
392 Glu Lys Met Pro Gln Thr Thr Ile Gln Val Asp Gly Ser Glu Lys Lys
393 370                375                380
396 Ile Val Ser Ile Lys Asp Phe Leu Gly Ser Glu Asn Lys Arg Thr Gly
397 385                390                395                400
400 Ala Leu Gly Asn Leu Lys Asn Ser Tyr Ser Tyr Asn Lys Asp Asn Asn
401                405                410                415
404 Glu Leu Ser His Phe Ala Thr Thr Cys Ser Asp Lys Ser Arg Pro Leu
405                420                425                430
408 Asn Asp Leu Val Ser Gln Lys Thr Thr Gln Leu Ser Asp Ile Thr Ser
409                435                440                445
412 Arg Phe Asn Ser Ala Ile Glu Ala Leu Asn Arg Phe Ile Gln Lys Tyr
413                450                455                460
416 Asp Ser Val Met Gln Arg Leu Leu Asp Asp Thr Ser Gly Lys
417 465                470                475

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420 &lt;210&gt; SEQ ID NO: 7

421 &lt;211&gt; LENGTH: 28

422 &lt;212&gt; TYPE: DNA

423 &lt;213&gt; ORGANISM: Artificial

425 &lt;220&gt; FEATURE:

426 &lt;223&gt; OTHER INFORMATION: F1-V.asd.F

428 &lt;400&gt; SEQUENCE: 7

429 tacatccatg gcagatttaa ctgcaagc

28

432 &lt;210&gt; SEQ ID NO: 8

433 &lt;211&gt; LENGTH: 30

434 &lt;212&gt; TYPE: DNA

435 &lt;213&gt; ORGANISM: Artificial

437 &lt;220&gt; FEATURE:

438 &lt;223&gt; OTHER INFORMATION: Primer F1-V.asd.R

440 &lt;400&gt; SEQUENCE: 8

441 cgcggatcct catttaccag acgtgtcatc

30

444 &lt;210&gt; SEQ ID NO: 9

RAW SEQUENCE LISTING ERROR SUMMARY

DATE: 06/14/2006

PATENT APPLICATION: US/10/581,466

TIME: 10:09:21

Input Set : A:\AVA-434.3P US.txt

Output Set: N:\CRF4\06142006\J581466.raw

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete,  
per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:6,7,8,9,10,11,12,13,14

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/581,466

DATE: 06/14/2006

TIME: 10:09:21

Input Set : A:\AVA-434.3P US.txt

Output Set: N:\CRF4\06142006\J581466.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application Number